

IMPROVED METHODS AND APPARATUS FOR ELECTROLYSIS OF WATER

ABSTRACT OF THE DISCLOSURE

A method and apparatus are provided for electrolyzing water for enhanced production of oxygen, hydrogen and heat by 5 the steps of (i) providing an electrochemical cell comprising an isotopic hydrogen storage cathode, an electrically conductive anode and an ionically conducting electrolyte comprising water, and (ii) impressing a repeating sequence of voltages across the cathode and anode comprised of at least two 10 cell voltage regimes, a first cell voltage regime consisting of a voltage sufficient to enhance cathodic absorption of hydrogen, and a second cell voltage regime consisting of at least one voltage pulse which is at least two times the voltage of the first cell voltage regime for a total duration no 15 greater than 0.10 seconds.